MONTHLY WEATHER REVIEW.

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INTRODUCTION.

This REVIEW contains a general summary of the meteorological conditions which prevailed over the United States and Canada during April, 1886, based upon the reports from the regular and voluntary observers of the Signal Service and from co-operating state weather services.

Descriptions of the storms which occurred over the north Atlantic Ocean during the month are also given, and their approximate paths shown on chart i. In tracing the centres of the paths of these storms data from the reports of one hundred and eighty-eight vessels have been used.

Over the Atlantic, high pressures and fair weather prevailed until the 20th, followed by low pressures and stormy weather continuing to the close of the month. Pressures below 29.00 were reported on the 1st, 17th, and 30th.

Icebergs and field ice drifted into the Atlantic in large quantities after the 15th, reaching southward to the latitude of N. 42°, and one iceberg was observed as far eastward as W. 30°; this is the most eastern limit of icebergs ever reported to this office during the month of April.

The most violent storm of the month was the hurricane of March 31st to April 1st, of which very full reports, furnished by ship captains, will be found under the heading "North Atlantic storms."

Seven areas of low pressure have been traced over the United States during April, 1886, the average number for April during the last thirteen years being 10.6; the largest number for April in the above period is eighteen, in 1879, and the least is seven, in 1881 and 1886. Low area number ii for April, 1886, was the severest storm of the month. It was especially severe in the Lake region and on the New England and middle Atlantic coasts, and caused much damage to shipping and other interests. The tides along the New England and middle Atlantic coasts were unusually high during the prevalence of this storm.

The high mean pressure over New England and the middle Atlantic states, as shown on chart ii, is worthy of note, the departures above the normal in these districts ranging from .20 to .26.

The mean temperature is above the normal over the northern districts east of the Rocky Mountains, the departures being greatest in the extreme northwest, where they range from 6° to 8°. The temperature is below the normal over the southern districts, the departures being most marked in Florida.

The precipitation is in excess of the normal over the middle Atlantic states, Lake region, and generally in all districts west of the Mississippi River, with the exception of the west Gulf states and north Pacific coast. The most marked deficiencies occurred in the south Atlantic states and Tennessee, and the greatest excess occurred in the extreme northwest and middle Pacific coast region.

The destructive freshets in the south Atlantic and east Gulf states at the beginning of the month were due to the heavy rains which fell during the latter part of March, there being a marked deficiency in the precipitation for April in that region.

The tornado which occurred in Minnesota on the 14th during the prevalence of low area iv was unusually destructive to life and property.

Chart vi exhibits curves representing the results of simultaneous observations of the electrometer at certain stations, as prepared by Prof. T. C. Mendenhall, Office of the Chief Signal Officer. Under the heading "Atmospheric electricity," will be found notes, by Professor Mendenhall, relating to the chart, and to the subject of observations of the electrometer.

In the preparation of this REVIEW the following data, received up to May 20, 1886, have been used, viz., the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and thirty-three Signal Service stations and twenty-one Canadian stations, as telegraphed to this office; one hundred and sixty-three monthly journals and one hundred and sixty monthly means from the former, and twenty-one monthly means from the latter; two hundred and ninety-five monthly registers from voluntary observers; sixty-four monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports through the co-operation of the "New York Herald Weather Service;" abstracts of ships' logs furnished by the publishers of "The New York Maritime Register;" monthly weather reports from the New England Meteorological Society, and from the local weather services of Alabama, Colorado, Georgia, Illinois, Indiana, Minnesota, Missouri, Nebraska, Ohio, and Tennessee, and of the Central Pacific Railway Company; trustworthy newspaper extracts, and special reports.

ATMOSPHERIC PRESSURE.

[Expressed in inches and hundredths.]

The mean atmospheric pressure for April, 1886, determined from the tri-daily telegraphic observations of the Signal Service, is shown by isobarometric lines on chart ii.

The mean pressure is greatest over New England and adjacent portions of the Canadian Provinces, lower lake region, and the middle Atlantic states, the highest monthly barometric means (30.13) occurring at Albany, New York; New London, Connecticut; and Sydney, Nova Scotia. Westward and southwestward of the districts named the mean pressure decreases until reaching the Pacific coast region, where a slight rise in the barometric means is noted. The area of minimum pressure occupies the middle and southern Rocky Mountain districts, where the means are generally below 29.9, there being a small area comprising portions of Arizona and New Mexico enclosed by the isobar for 29.85. The lowest barometric mean reported is 29.83 for Fort Thomas, Arizona.

A comparison of the charts exhibiting the mean pressure for the months of March and April, 1886, shows that at stations along the Mississippi from the Gulf to Minnesota the means either coincide or differ but slightly. To the eastward of the Mississippi a marked increase in the mean pressure for April